SI B 04 25 02
Tools and Equipment

July 2005
Technical Service

This Service Information bulletin supersedes S.I. B04 25 02 **dated February 2004.**

NEW designates changes to this revision

SUBJECT
New BMW Battery Tester

MODEL
ALL

SITUATION
BMW in cooperation with Midtronics Inc. has developed a vehicle battery tester that uses microprocessor technology instead of carbon pile testing. The advantage of microprocessor testing is that the vehicle battery does not have to be charged before testing. This results in time saving. **The new BMW Battery Tester uses a warranty code that must be on the BMW warranty claim for a defective battery.** Refer to the Warranty section of this bulletin for details.

Distribution of Battery Testers paid for by the cost per vehicle program (as outlined above) are complete. Additional testers may be purchased directly from the Parts Distribution Center.

BMW Battery Tester

PN 99 00 0 003 343

Price= $925

TESTER SPECIFICATIONS

- Capable of in or out of vehicle battery testing.
- Automatic Temperature compensation
- Capable of after-charge testing.
- Testing standards of Cold Cranking Amps (CCA included on BMW batteries) and DIN spec (European spec included on BMW batteries)
- Test 12-volt batteries as low as 1 volt.
- Starter and charging system test.

Note: Always check charging voltage nominal values for the vehicle being tested if results show "Charging system problem: High charging voltage". Under cold temperature conditions E65/66 vehicles can show a high charging voltage of up to 16.0 volts. Always refer to the vehicle Technical Data section 12 32 "Regulator-temperature dependant charging voltage" for voltage specifications.

- Voltmeter functions

- IR Printout which includes:
  - Date and Time
  - Last 7 digits of the vehicle VIN
  - Battery CCA or DIN rating
  - Tested voltage
  - Tested amperage (CCA or DIN)
  - Starter test cranking voltage (optional test)
  - Charging system voltage load on/off (optional test)
  - Status of diode Ripple
  - Warranty Code – Refer to warranty section below.
- Included with Battery Tester
  - Hand held Battery Tester with long test cables
  - Compact IR printer
  - Detailed instruction book.
  - Hard carry case.
  - Extra roll of printer paper.

CHARGING SYSTEM DIAGNOSTIC HINTS

- When battery voltage is greater than approximately 8 volts, the question "before charge" or "after charge" will be displayed. "Before charge" must be selected if the battery has not yet been charged. Provided that the tester does not find the battery to be defective (like a shorted cell), the battery will be tested and the message "Charge and retest" will be displayed. After the battery is charged, the path "after charge" must be selected. If the battery is found to be defective the tester will determine it to be a defective battery (replace).If the battery has less than approximately 8 volts when tested, provided that the tester does not find the battery to be defective (like a shorted cell), the tester will always display "charge and retest". (There will be no message "before charge" or "after charge"). A discharged battery that does not have a problem like a shorted cell will charge to a sufficient voltage for the tester to make the proper determination (good or replace).
- All battery tests must be performed at the battery.
- Do not replace a battery just because the eye is black. The green eye is only an indicator. Before testing always clean the battery terminals with a wire brush.
- For in-vehicle testing, all electronic loads must be off.

- Both Midtronic tester clamps must be firmly attached to the battery terminals.
- Select the CCA rating only from the vehicle battery, the battery may have previously been replaced by a different CCA rated battery than the vehicle has as original equipment.
- When a discharged battery is encountered-
    - Check the function of the charging system.
    - Check the electrical system for closed circuit current.
- When using a Deutronic battery charger in the "in vehicle" battery charging mode, in order to prevent damage to the vehicle electrical system, the maximum charging voltage is limited to 14.2 volts. As a result, the battery can only charge to a maximum of 85%. To charge the battery to 100%, remove one of the vehicle battery terminals (to protect the vehicle electrical system from overvoltage damage), then set the Deutronic charger to "Stand alone" mode. For more information refer to the Deutronic operating instructions page 13, section 25).
- When using the Midtronics tester, although is it not essential to remove surface charge, this can result in values that appear inconsistent (voltage values higher than expected). For consistent results, always remove the surface charge after a jump start, after recharging, or after running the engine. To remove the surface charge, turn on the high beams for one minute then allow the battery voltage to stabilize (approximately for one minute) before testing.
- If the tester displays "Good recharge" the battery must be retested after recharging. Only release the vehicle when the tester displays "Good Battery" **and** the open circuit voltage (OCV) is 12.6 volts, or higher – this indicates a fully charged battery. Note that the display "Good battery" is not in itself an indication of a fully charged battery.
- Below is an Open Circuit Voltage chart listing battery voltage as it relates to the state of battery charge. An Open Circuit Voltage measurement is only valid if the surface charge removed. It can be measured using a multimeter, or it is the voltage shown on the Midtronics print out. To remove the surface charge, turn on the high beams for one minute then allow the battery voltage to stabilize (approximately one minute) before testing.

Open Circuit Voltage-State of Battery Charge

OCV	State of Charge
12.65 volts	100%
12.45 volts	75%
12.24 volts	50%
12.06 volts	25%
11.89 volts	Discharged

- In case the battery needs to be recharged, use the table below as a guide for the amount of time the battery must be charged. For other battery sizes, or other charging rates, adjust the values accordingly.

Minimum Charging Time Using 20Amp Charger

	Open Circuit Volts OCV State of Charge (SOC)			
Battery Size	11.89 volts (0%)	**12.06 volts (25%)**	12.24 volts (50%)	**12.45 volts (75%)**
70 Ah	4 1/4 hours	3 1/4 hours	2 hours	1 hours
110 Ah	6 1/2 hours	5 hours	3 1/4 hours	1 1/2 hours

- Attached are generic answers to Frequently Asked Questions prepared by Midtronics regarding Midtronics battery testers. Please note that some points may not apply directly to the BMW Midtronics tester but the information contained is very informative.

Tester Warranty

The battery tester is delivered with a 2 year limited warranty. The warranty does not cover damage to the tester due to water damage, over voltage, dropping or misuse. Attempts to open the unit will void the warranty.

Defective battery testers must be returned to Midtronics for repair. To return a tester for repair, follow the directions below.

1. Call Midtronics @ 1 800 776 1995
2. Select #3 Customer Service at the menu
3. Customer service will assign you a Return Authorization number (RA#)
4. Return the unit freight prepaid to the address given by Customer Service
5. The "Attention to" line must have the "RA# XXXX" (where XXXX is the RA# given to you).
6. Midtronics will service and return the unit the next business day after receipt of the unit.
7. Return shipment will be via the same type carrier and service as received.
8. Battery Testers determined to be out of warranty due to abuse will be repaired at the centers expense.

PAPER SUPPLY LOCATIONS

Replacement paper rolls may be purchased through the following locations.

Location	**PN**	**Phone Number**
Office Depot	209-653-271	1 800 463 3768
Office Max	20121146	1 800 283 3768
Quill	035-856607	1 800 789 1331

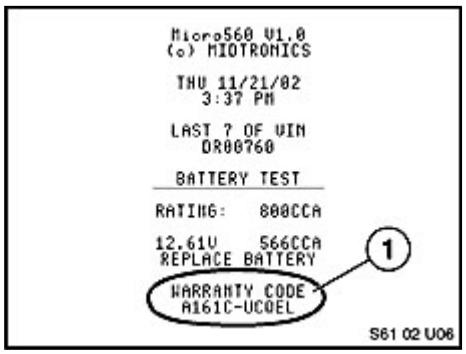
WARRANTY INFORMATION

Warranty Code for claims relating to all BMW Batteries

- The warranty code is an encrypted code that includes all of the information from the printout.

Effective immediately, this tester must be used for testing batteries with charge related defects, and that are to be claimed under warranty.

NEW Effective immediately, and excluding the situation described in Note 2 (below), this tester must be used for testing batteries with charge related defects, and that are to be claimed under warranty.



On completion of a battery test, print out the results, and file the printout with the completed repair order for future reference if requested.
The printout contains a warranty code (1). This code must be included in the "Comments" section when submitting the warranty claim.
Failure to quote the warranty code in the comments of the warranty claim may result in a delay in processing or refusal of the warranty claim.

Note: The "Warranty Code" is not an authorization number to replace the battery. Only replace the battery when this is stated in the test results (for example "Replace Battery")

NEW Note 2: For vehicles with power management systems e.g. E60, E65 and E90: If the battery is damaged due to discharge prior to QC1, the following message will show during CBS Handover Inspection "Battery damaged, replace battery before delivery". In this case, a Midtronics printout is not required because the CBS message will be transmitted automatically within the FASTA data. Battery failures that are the result of storage neglect or physical damage may not be claimed to BMW.